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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,095	02/08/2002	James B. Klassen	KLASN.001A	9459

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EXAMINER

TRIEU, THAI BA

ART UNIT PAPER NUMBER

3748

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/072,095

Applicant(s)

KLASSEN, JAMES B.

Examiner

Thai-Ba Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-37 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 13.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

The preliminary Amendment filed on July 18, 2002 is acknowledged.

This application is in condition for allowance except for the following formal matters:

#### **IN THE DRAWINGS:**

1. The drawings fail to show the following elements as described in the specification:

1. ***"high compression region 106"*** (See Page 14, line 1);
2. ***"a surface 116"*** (See Page 14, line 6);
3. ***"apparatus 220"*** (See Page 18, line 24, and Page 23, line 17);
4. ***"distance 279"*** (See Page 22, line 1);
5. ***"entrance region 302"*** (See Page 22, line 9);
6. ***"distance 283"*** (See Page 22, line 14);
7. ***"compression chambers"*** (See Page 23, line 7);
8. ***"surface 362"*** (See Page 25, line 21);
9. ***"central frame member 494"*** (See Page 27, line 13);
10. ***"annular interior surfaces 518"*** (See Page 27, lines 13-14);
11. ***"the housing 425"*** (See Page 28, line 2);
12. ***"toe portion passage 528"*** (See Page 28, line 6);
13. ***"axial conduit 518"*** (See Page 28, line 12);
14. ***"central region 578"*** (See Page 28, line 22); and
15. ***"shaft 580"*** (See Page 28, line 22).

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Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

2. The reference characters **"22"** and **"28"** have both been used to designate the same element (*See Figure 2*). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The reference characters **"142"** and **"144"** have both been used to designate the same element (*See Figure 3*). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The reference character **"324"** has been used to designate both **"entrance passage"** (See Page 22, line 15) and **"inner rotor"** (See Page 24, line 9). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

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5. The reference character **"520"** has been used to designate both **"housing"** (See Page 34, line 7) and **"entrance port"** (See Page 28, line 3). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

6. The reference character **"100"** has been used to designate two different elements (See Figure 3). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

6. The reference character **"223"** has been used to designate two different elements (See Figure 12). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

7. The drawings include the following reference sign(s) not mentioned in the description:

- a. **"225, 229, 243, 245, 249, 253, 257, 261, 263, and 265"** (See Figure 12);
- b. **"273, 275b, and 277"** (See Figure 13);
- c. **"444"** (See Figure 18);
- d. **"491"** (See Figure 29);

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- e. **"490"** (See Figure 30);
- f. **"545"** (See Figure 21); and
- g. **"575"** (See Figure 23);

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

**IN THE SPECIFICATION:**

1. Applicant should elect either ***"inner rotor"*** or ***"inner wheel"*** to describe the element **"24"** through out the specification and claims, because of the consistency of the whole specification and claims (See Page 9, lines 30-31, Page 10, lines 10-31).
2. Applicant should elect either ***"outer rotor"*** or ***"outer wheel"*** to describe the element **"22"** through out the specification and claims, because of the consistency of the whole specification and claims (See Page 9, lines 30-31, Page 10, lines 10-31).
3. **" 84d' "** should be replaced by – **84d** – (See Page 12, line 9).

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4. Applicant should elect one of the following terms to describe the element **"64"** through out the specification and claims, because of the consistency of the whole specification and claims:

- a. "engagement surface 64" (See Page 10, line 4);
- b. **"semi circle surface 64"** (See Page 12, line 22);
- c. **"surface 64"** (See Page 12, line 23); and
- d. **"toe surface 64"** (See Page 13, line 14).

5. **"leg 28"** should be replaced by **--leg 52--** (See Page 13, line 9).

6. **"outer rotor 26"** should be replaced by **-- outer rotor 22 --** (See Page 13, line 28).

7. **"152a"** (See Page 18, line 11) should be replaced by **--152--** for being incorporated with the drawings (See Figure 1).

8. **"forward and reward surfaces 322 and 334"** (See Page 25 line 9) should be replaced by **--forward and rearward surfaces 332 and 334 --** (for correcting of typo errors).

9. **"surfaces 434 and 342"** (See Page 38, lines 20-21) should be replaced by **-- surfaces 434 and 432 --** (for correcting of typo error).

**IN THE CLAIMS:**

1. Claim 1 should be replaced by following:

-- A device to convert energy by displacing fluid, the device comprising:

an outer rotor adapted to rotate about a first axis of rotation and comprising:

a plurality of fins each comprising a first surface and a second surface that partially define a chamber region interposed thereinbetween where a first fin and a second fin are members of ~~[[the]]~~ said plurality of fins and are adjacent to each other, ~~[[and ]]~~

a first reference radius extends through the first fin and a second reference radius extends through the second fin, a first surface of ~~[[the]]~~ said first fin is a first defined distance from ~~[[the]]~~ said first reference radius with respects to the radial location along ~~[[the]]~~ said first reference radius, and a second surface of ~~[[the]]~~ said second fin is a second defined distance from ~~[[the]]~~ said second reference radius with respects to the radial location along ~~[[the]]~~ said second reference radius, ~~[[and]]~~

the number of the chambers indicated by variable X, **and**

an outer reference dimension circle that is concentric with ~~[[the]]~~ said first axis of rotation of ~~[[the]]~~ said outer rotor and the outer reference dimension circle having a radius  $r_o$ ;



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a plurality of inner rotors each adapted to rotate about a second set of axes of rotation and each inner rotor comprising an inner reference circle that is concentric with the axis of rotation of each inner rotor and each inner reference circle intersecting the outer reference circle of ~~[[the]]~~ said outer rotor at an intersect point where the velocity of the inner rotor and outer rotor are the same at the said intersect points, the inner reference circles each having a radius  $r_i$ , the inner rotors further each comprising a plurality of legs the number of said legs for each inner rotor is indicated by variable ~~[[ $\Theta$ ]]~~  $\Delta$  where a first leg that is a member of said legs comprises a foot region the foot region comprising~~[[:]]~~; *(for consistency with the specification)*

a heel region comprising a first reference point that is adapted to rotate with said first reference circle where said first reference point is non constant perpendicular distance from ~~[[the]]~~ said first reference radius of the outer reference circle with respects to rotation of the inner and the outer rotor, and the heel region further comprising a first engagement surface that is a first defined distance from ~~[[the]]~~ said first point where ~~[[the]]~~ said first defined distance of the heel region and the first defined distance of the first surface of ~~[[the]]~~ said first fin are collinear and their sum is non constant with respects to rotation of the inner rotor and the outer rotor,

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a toe region comprising a second reference point that is positioned on said inner reference dimension circle, a second engagement surface that is a second defined distance from the reference point where the second defined distance of the toe region and the second defined distance of the second surface of the second fin are collinear and their sum is non constant with respects to rotation of the inner rotor and outer rotor~~[[,]]~~ and

a casing having an inner chamber region that is adapted to house of said outer rotor and allow the outer rotor to rotate therein, the casing comprising~~[[;]]~~:

a fluid entrance system comprising a duct to communicate with the chamber region of ~~[[the]]~~ said outer rotor, and

an interior cavity adapted to house ~~[[the]]~~ said inner rotors and allow the inner rotors to rotate therein,

whereas the said variables ~~[[ $\theta$ ]]~~  $\Delta$  , ~~[[ $\theta$ ]]~~  $X$ ,  $r_i$  , $r_o$  are constrained by the equation ~~[[ $\theta$ ]]~~  $\Delta$  / ~~[[ $\theta$ ]]~~  $X$  =  $r_i / r_o$  , the foot region of ~~[[the]]~~ said first leg is adapted to engage the chamber region where the first engagement surface of said heel region engages ~~[[the]]~~ said first surface of a first fin and ~~[[the]]~~ said second engagement surface of ~~[[the]]~~ said toe region of ~~[[the]]~~ said first foot is adapted to engage the second surface of a second fin to form a sealed operating chamber where rotation of ~~[[the]]~~ said ~~[[first]]~~ inner rotor and ~~[[the]]~~ said outer rotor causes displacement of fluid in the sealed operating chamber.--

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2. Claims 2 and 24 should be replaced by following:

-- The device as recited in claim 1 where ~~[[the said]]~~ a porting of the casing is adapted to allow non compressible fluid to enter ~~[[the]]~~ said chamber region and the casing comprising a discharge port in communication with the sealed operating chamber as the volume of fluid is displaced.--

3. In claims 3, 25, and 36, line 1, ~~--the--~~ should be inserted before **"ratio"**.

4. In claims 4 and 26, line 5, **"the"** before **"said first foot"** should be deleted.

5. In claims 5 and 28, line 1, ~~--the--~~ should be inserted before **"ratio"**.

6. In claims 7, 27, and 37, line 1, ~~--the--~~ should be inserted before **"ratio"**.

7. Claim 10 should be corrected the same as claim 1 being set forth above.

8. In claim 11 should be replaced by following:

-- The device as recited in claim 10 further comprising: a combustion chamber where air is directed from ~~[[the]]~~ said exit channel-to an inlet region of the said combustion chamber ~~[[.---The]]~~, the combustion chamber further comprising an exit passage that is in communication with an expansion passage.--

9. Claim 17 should be corrected the same as claim 1 being set forth above.

10. In claim 18, lines 1-2, **"the"** before **"said sealed chamber"** should be deleted.

11. In claim 19, line 1-2, **"the"** before **"said sealed chamber"** should be deleted

12. In claim 20, line 2, **"the"** before **"said sealed chamber"** should be deleted.

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13. In claim 21, line 2, "**the**" before "**said first surface**" should be deleted
14. Claim 23 should be corrected the same as claim 1 being set forth above.
15. In claim 31, lines 17, 20, 22, 26, 27, 33, 34, 55, 57, 60, 61, 63, 64, 65, and 68, "**the**" before "**said ...**" should be deleted.
16. In claim 31, lines 68 should be replaced by -- where rotation of ~~[[the]]~~ said ~~[[first]]~~ **inner** rotor and ~~[[the]]~~ said **outer** rotor causes displacement of fluid in the sealed operating chamber.--
17. In claim 33, line 4, "**the**" before "**said ...**" should be deleted.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

### **Conclusion**

The IDS (PTO-1449) filed on November 10, 2003 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Tschritter (US Patent Number Re 31,418) discloses a metering apparatus for plastic materials.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB  
April 27, 2004



Thai-Ba Trieu  
Patent Examiner  
Art Unit 3748



THOMAS DENION  
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